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10/516,672	08/08/2005	Helmuth Schulze-Trautmann	244.1005	5286
20311 7590 10/01/2009 LUCAS & MERCANTI, LLP 475 PARK AVENUE SOUTH 15TH FLOOR NEW YORK, NY 10016				
EXAMINER				
BOYER, RANDY				
ART UNIT		PAPER NUMBER		
1797				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

info@lmiplaw.com

### Office Action Summary

**Application No.**

10/516,672

**Applicant(s)**

SCHULZE-TRAUTMANN ET AL.

**Examiner**

RANDY BOYER

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 25-29, 31, 32, 36-41, 43-46 and 51-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25-29, 31, 32, 36-41, 43-46 and 51-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

1. Examiner acknowledges Applicant's response filed 15 September 2009 containing amendments to the claims, remarks, and certified translations of the foreign priority documents.
2. Claims 25-29, 31, 32, 36-41, 43-46, and 51-54 are pending.
3. Applicant's amendment to claim 44 is sufficient to overcome the previous objection. Likewise, Applicant's amendments to claims 25 and 31 are sufficient to overcome the previous rejections under 35 U.S.C. 112, second paragraph.
4. The previous rejection of claims 25-29, 31, 32, 36-41, 43-46, and 51-54 in view of John (US 7,169,726) is withdrawn in view of Applicant's submission of the translated priority documents and perfection of an earlier priority date.
5. The remaining rejections of claims 25-29, 31, 32, 36-41, 43-46, and 51-54 under 35 U.S.C. 102(e) and/or 35 U.S.C. 103(a) are maintained. The rejections follow.

### *Claim Rejections - 35 USC § 102 / 35 USC § 103*

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 25-29, 31, 32, 36-41, 43-46, and 51-54 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hoek (US 2004/0199040). Alternatively, claims 25-29, 31, 32, 36-41, 43-46, and 51-54 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hoek (US 2004/0199040), as evidenced by Eilers (EP 668342 A1) and/or Bertaux (EP 776959 A2).

10. With respect to claim 25, Hoek discloses a microcrystalline paraffin as solid product, prepared by catalytic hydroisomerization of FT paraffins (see Hoek, Abstract; and page 2, paragraph 15).

Hoek does not explicitly disclose wherein the FT paraffins have a carbon chain length distribution in the range from 20 to 105 at temperatures above 200°C; or wherein the catalytic hydroisomerization occurs in the presence of a catalyst comprising  $\beta$ -zeolite and gamma aluminum oxide.

However, Hoek discloses wherein the feed material for production of the microcrystalline paraffins is obtained from a FT synthesis process, e.g. that described by Eilers and Bertaux (see Hoek, page 2, paragraph 15). In this regard, Examiner notes that the FT synthesis processes disclosed by both Eilers and Bertaux produce paraffins having a carbon chain length distribution greater than 20 (see Eilers, page 6, lines 12-23) (see Bertaux, column 3, lines 15-29). In addition, Hoek that a preferred hydroisomerization catalyst is one such as that disclosed in EP-A-776959 [Bertaux] (see Hoek, page 1, paragraph 13). In this regard, Examiner notes that Bertaux discloses a  $\beta$ -zeolite hydroconversion catalyst (see Bertaux, column 4, lines 27-36).

Therefore, Hoek (by reference to both Eilers and Bertaux as sources of acceptable feed material; and by reference to Bertaux as disclosure of a preferred catalyst) inherently discloses wherein the FT paraffin feed material has a carbon chain length distribution of greater than 20, and wherein the catalyst is a  $\beta$ -zeolite. Finally, both Hoek and Bertaux disclose the use of alumina as a known constituent of hydroisomerization catalysts (see Hoek, page 1, paragraph 13) (see Bertaux, column 3, lines 43-50). Moreover, Bertaux discloses wherein such hydroisomerization catalyst may comprise a hydrogenation component (e.g., platinum, palladium) supported on a refractory oxide carrier comprising mixtures of alumina with zeolite (see Bertaux, column 3, lines 43-50).

In view of the foregoing, Examiner finds Applicant's claim 25 unpatentable over the disclosure of Hoek in view of what is already known in the art, as evidenced by Eilers and Bertaux.

11. With respect to claim 26, Hoek discloses wherein the paraffin has a needle penetration value of less than 10 mm (see Hoek, Table 1).

12. With respect to claims 27 and 28, Hoek discloses wherein the paraffin is substantially free of aromatics, heterocyclic compounds, and naphthenes (see Hoek, page 2, paragraph 19).

13. With respect to claim 29, Hoek discloses wherein the paraffin has a proportion by weight of isoalkanes greater than that of normal alkanes in the paraffins (see Hoek, page 2, paragraph 19; and Table 1).

14. With respect to claim 31, Hoek discloses a process for preparing a microcrystalline paraffin by catalytic hydroisomerization comprising the steps of: (a) use of FT paraffins as starting material, having greater than 20 carbon atoms (see discussion *supra* at paragraph 10); (b) use of a  $\beta$ -zeolite catalyst (see Hoek, page 1, paragraphs 6-8) (see discussion *supra* at paragraph 10); (c) use of a process temperature above 200°C (see Hoek, page 1, paragraph 7); and (d) action of pressure in the presence of hydrogen (see Hoek, page 1, paragraph 7), e.g. at temperatures in the range of 230°C to 270°C and pressures in the range of 3 MPa to 8 MPa (see Hoek, page 1, paragraph 7).

15. With respect to claims 32 and 41, Hoek discloses the use of *any* suitable amorphous silica-alumina carrier (e.g. a zeolite) with a majority of pores having

diameters in the mesoporous range as a support material for a metal of transition group 8 (see Hoek, page 1, paragraphs 8-10).

16. With respect to claims 36 and 37, Hoek discloses wherein the process may be conducted at a temperature between 200C and 400C and a pressure between 10 bar and 100 bar (see Hoek, page 1, paragraph 7).

17. With respect to claims 38 and 39, Hoek discloses wherein the feed ratio of hydrogen to FT paraffin may be in the range of 250:1 to 600:1  $\text{m}^3/\text{m}^3$  (see Hoek, page 1, paragraph 7).

18. With respect to claims 40 and 51, Hoek is not specifically limited with respect to the amount of catalyst to be used (see Hoek, entire disclosure).

19. With respect to claims 43, 44, and 52, Hoek discloses wherein the catalyst may be platinum with a metals contents of between 0.1 wt% and 2.0 wt% (see Hoek, page 1, paragraph 8).

20. With respect to claims 45, 46, and 53, Hoek discloses wherein the FT paraffin used has a solidification point of 60°C or greater (see Hoek, page 1, paragraph 14) and wherein short-chain constituents may be removed prior to the step of hydroisomerization (see Hoek, page 2, paragraph 17; and Example 1).

21. With respect to claim 54, Hoek discloses wherein the process optionally comprises a deoiling step (see Hoek, page 2, paragraph 18).

***Claim Rejections - 35 USC § 103***

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

23. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

24. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

25. Claims 25-29, 31, 32, 36-41, 43-46, and 51-54 are rejected under 35 U.S.C. 103(a) as obvious over Wittenbrink (WO 01/74969 A2) in view of either (1) Hoek (US 2004/0199040) and Bertaux (EP 776959 A2) or (2) Carati (US 5,981,419).

26. With respect to claim 25, Wittenbrink discloses a microcrystalline paraffin as solid product, prepared by catalytic hydroisomerization of FT paraffins having a carbon chain



length distribution greater than 20 (see Wittenbrink, Abstract; and page 5, first paragraph).

Wittenbrink does not explicitly disclose wherein the hydroisomerization occurs in the presence of a catalyst comprising  $\beta$ -zeolite and aluminum oxide.

However, Wittenbrink discloses wherein the hydroisomerization catalyst support may be any zeolite (see Wittenbrink, page 8) ("The support for the metals can be any refractory oxide or zeolite or mixtures thereof.") (emphasis added). In this regard, it is known in the art to use a zeolite/alumina catalyst for hydroisomerization of paraffinic feedstocks for the production of microcrystalline paraffins, as evidenced by Hoek and Bertaux (see discussion *supra* at paragraph 10). Likewise, Carati discloses a beta-zeolite based catalyst comprising aluminum oxide for the selective hydroisomerization of n-paraffins into isoparaffins and which has minimum activity towards cracking of the feedstock (see Carati, Abstract; column 1, lines 15-17 and 25-29; and column 8, Table 1).

Therefore, the person having ordinary skill in the art would have been motivated to modify the process of Wittenbrink to provide for use of a beta-zeolite/alumina catalyst (e.g., similar to that disclosed by Carati) in order to minimize the amount of hydrocracking and maximize the yield of wax isoparaffins produced.

Finally, the person having ordinary skill in the art would have had a reasonable expectation of success in modifying the process of Wittenbrink as described above because: (1) Wittenbrink discloses that the catalyst used may be any suitable mixture of zeolite and refractory oxide; and (2) beta-zeolite/alumina catalysts are known in the art

for the hydroisomerization of paraffinic feedstocks (as evidenced by Hoek/Bertaux and Carati).

27. With respect to claim 26, Wittenbrink discloses wherein the paraffin may have a needle penetration value of less than 10 mm (see Wittenbrink, Table 2).

28. With respect to claims 27 and 28, Wittenbrink discloses wherein the paraffin is free of aromatics, heterocyclic compounds, and naphthenes (see Wittenbrink, entire disclosure; and page 6, second paragraph).

29. With respect to claim 29, Wittenbrink discloses wherein the paraffin is created via a process for hydroisomerization (see Wittenbrink, pages 6-10).

30. With respect to claim 31, Wittenbrink discloses a process for preparing a microcrystalline paraffin by catalytic hydroisomerization comprising the steps of: (a) use of FT paraffins as starting material, having greater than 20 carbon atoms (see Wittenbrink, page 5, paragraph 1); (b) use of a zeolite catalyst (see Wittenbrink, page 8, second paragraph) (see discussion *supra* at paragraph 26); (c) use of a process temperature above 200°C (see Wittenbrink, page 7, second paragraph); and (d) action of pressure in the presence of hydrogen (see Wittenbrink, page 7, second paragraph).

31. With respect to claims 32 and 41, Wittenbrink discloses the use of any zeolite catalyst support (see Wittenbrink, page 8, second paragraph).

32. With respect to claims 31, 36, and 37, Wittenbrink discloses wherein the process may be carried out at temperatures in the range of 230°C to 270°C and pressures in the range of 3 MPa to 8 MPa (see Wittenbrink, page 7, second paragraph).

33. With respect to claims 38 and 39, Wittenbrink discloses wherein the feed ratio of hydrogen to FT paraffin may be in the range of 250:1 to 600:1  $\text{m}^3/\text{m}^3$  (see Wittenbrink, page 8, table).

34. With respect to claims 40 and 51, Wittenbrink is not specifically limited with respect to the amount of catalyst to be used (see Wittenbrink, entire disclosure).

35. With respect to claims 43, 44, and 52, Wittenbrink discloses wherein the catalyst may be platinum with a metals content of between 0.5 wt% and 20 wt% (see Wittenbrink, page 8, second paragraph).

36. With respect to claims 45, 46, and 53, Wittenbrink discloses wherein the FT paraffin used has carbon atoms of 20 or greater and wherein short-chain constituents may be removed prior to the step of hydroisomerization (see Wittenbrink, page 6, second and third paragraphs).

37. With respect to claim 54, Wittenbrink discloses wherein the microcrystalline paraffins are prepared in a single step (see Wittenbrink, page 7, second and third paragraphs) and wherein the product may be fractionated to obtain a wax fraction having a desired melting point and needle penetration value (see Wittenbrink, page 8, first paragraph).

### ***Response to Arguments***

38. Applicant's arguments filed 15 September 2009 have been fully considered but they are not persuasive.

39. Examiner understands Applicant's arguments to be:

- I. Hoek fails to disclose the product of claim 25 or the process of claim 31.
- II. The Bertaux catalyst is completely different from that preferred by Hoek (citing Bertaux) and this negates a finding of both anticipation and obviousness.
- III. The mention by Hoek and/or Bertaux of a preferred catalyst as platinum or palladium is a general statement that fails to provide the specific catalytic composition required by claims 25 and 31.
- IV. Wittenbrink teaches so many varied reagents and process parameters for conducting a general Fischer-Tropsch reaction that it would have been impossible for the ordinary artisan to have picked from among the many choices to arrive at the claimed invention.

40. With respect to Applicant's first argument, Examiner notes that the rejection over Hoek necessarily incorporates the relevant teachings of both Eilers and Bertaux. As the court recently explained, a host document (here, Hoek) incorporates matter by reference if it contains language "clearly identifying the subject matter which is incorporated and where it is to be found." Callaway Golf Co. v. Acushnet Co., 91 USPQ.2d 1705, 1717 (Fed. Cir. 2009) (quoting In re de Seversky, 474 F.2d 671, 674 (CCPA 1973)). In this case, Hoek clearly identifies Bertaux [EP-A-776959] as a source of preferred hydroisomerization catalyst (see Hoek, page 1, paragraph 13). Likewise, Hoek clearly identifies both Bertaux [EP-A-776959] and Eilers [EP-A-668342] as a source of preferred feed for production of a microcrystalline wax (see Hoek, page 2, paragraph 15). Thus, Examiner submits that Hoek discloses (or at the very least suggests) all claim limitations as provided in Applicant's claims 25 and 31 when read in light of Eilers and Bertaux.

41. With respect to Applicant's second argument, Hoek clearly identifies Bertaux [EP-A-776959] as a source of preferred hydroisomerization catalyst (see Hoek, page 1, paragraph 13). In this regard, Examiner notes that the disclosure of a prior art reference is not limited to its specific examples or preferred embodiments. See In re Lamberti, 545 F.2d 747, 750 (CCPA 1976); In re Fracalossi, 681 F.2d 792, 794 (CCPA 1982).
42. With respect to Applicant's third argument, see discussion *supra* at paragraph 10.
43. With respect to Applicant's fourth argument, such argument fails to comply with 37 CFR 1.111(b) because it amounts to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Wittenbrink discloses contacting a FT paraffin with a mixed refractory oxide and zeolite catalyst at temperatures in the range of 204°C to 343°C and pressures in the range of 300 psi to 1500 psi (about 2.07 MPa to about 10.34 MPa) (see Wittenbrink, page 8) which is entirely overlapping with the temperatures and pressures specified in Applicant's claims. With regard to the catalyst, Wittenbrink discloses the use of any refractory oxide or zeolite or mixtures thereof, and even discloses alumina as a preferred support material (see Wittenbrink, page 8). In this regard, mixed beta-zeolite and alumina catalysts are known in the art (as evidenced from the prior art of record) to be suitable for use in processes such as that disclosed by Wittenbrink (see e.g., Carati). Finally, with regard to the particular characteristics of the catalyst, Wittenbrink discloses wherein the zeolite component is present in an amount ranging from 60 wt% to 70 wt%,

the refractory oxide component is present in an amount ranging from 20 wt% to 25 wt%, the group VIII metal is present in an amount ranging from 2 wt% to 3 wt%, and the catalyst has a surface area in the range of 180 m<sup>2</sup>/g to 400 m<sup>2</sup>/g (see Wittenbrink, page 9).

### ***Conclusion***

44. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

45. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randy Boyer whose telephone number is (571) 272-7113. The examiner can normally be reached Monday through Friday from 10:00 A.M. to 7:00 P.M. (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola, can be reached at (571) 272-1444. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Randy Boyer/

Examiner, Art Unit 1797

/Glenn A Caldarola/

Acting SPE of Art Unit 1797